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Serial No. 09/803,015
July 21, 2003

IN THE CLAIMS

The following claim set replaces all prior versions, and listings, of claims in the application:

1. (Original) A system for producing chemical cellulose pulp from comminuted fibrous cellulose material, comprising:

a steaming vessel in which comminuted fibrous cellulose material is steamed to remove the air therefrom;

a superatmospheric pressure vertical treatment vessel having an inlet for a slurry of comminuted cellulose fibrous material at a top portion thereof and an outlet at a bottom portion thereof;

pressurizing transfer means for pressurizing a slurry of material from the steaming vessel and transferring it to said treatment vessel inlet, said pressurizing transfer means consisting of one or more high pressure slurry pumps, each having an inlet and outlet, located below said top portion of said treatment vessel; and

means for circulating liquid from the outlet of at least one said high pressure slurry pump to the inlet thereof.

2. (Original) A system as recited in claim 1 further comprising a liquid return line from said top portion of said treatment vessel, said return line operatively connected to an inlet or outlet of one of said slurry pumps.

3. (Original) A system as recited in claim 2 further comprising a heat exchanger located in said return line.

4. (Original) A system as recited in claim 3 wherein said heat exchanger is a heat exchanger for cooling or heating the liquid in the return line.

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5. (Original) A system as recited in claim 3 wherein said heat exchanger is a liquid-liquid indirect heat exchanger; and further comprising a source of cool liquid connected to said heat exchanger, for cooling the liquid in said return line.

6. (Original) A system as recited in claim 1 further comprising a slurring vessel having an inlet operatively connected to said steaming vessel and an outlet operatively connected to the inlet of said one or more slurry pumps.

7. (Original) A system as recited in claim 6 further comprising a liquid return line from said top portion of said treatment vessel, said return line operatively connected to said slurry vessel.

8. (Original) A system as recited in claim 7 further comprising a heat exchanger located in said return line.

9. (Original) A system as recited in claim 8 wherein said heat exchanger is an indirect heat exchanger for cooling or heating the liquid in the return line.

10. (Original) A system as recited in claim 1 wherein said at least one pump comprises at least two pumps.

11. (Original) A system as recited in claim 10 wherein each of said pumps has a said circulation means.

12. (Original) A system as recited in claim 1 wherein said circulation means comprises a conduit having a first valve therein, and further comprising a second valve between said pump outlet and said treatment vessel.

13. (Original) A method as recited in claim 11 wherein each of said circulation means comprises a conduit having a first valve therein, and further comprising a second valve between said pump outlet and said treatment vessel.

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14. (Original) A system as recited in claim 10 wherein said treatment vessel comprises a first vessel, and further comprising a second treatment vessel; a main conduit connected to said outlet of said at least one pump; a static flow splitter having an inlet and at least two outlets; said main conduit connected to said flow splitter inlet; and one of said flow splitter outlets connected to said first treatment vessel and another outlet to said second treatment vessel.

15. (Original) A system as recited in claim 14 wherein said flow splitter comprises a chamber having a substantially triangular shaped static baffle plate arrangement with a triangle apex substantially aligned with said inlet.

16 – 23 (Canceled)

24 (New) A system as recited in claim 1, further comprising a chip chute for directing comminuted fibrous cellulose material from the steaming vessel to the pressurization transfer means.

25. (New) A system as recited in claim 24, further comprising a cooking liquor line for supplying cooking liquor to the comminuted fibrous cellulose material within the chip chute to form said slurry thereof.

26. (New) A system as recited in claim 24 or 25, wherein said chip chute is pressurized.

27. (New) A system as recited in claim 24 or 25, wherein the chip chute is pressurized to between 1 to 50 psig.

28. (New) A system as recited in claim 24 or 25, wherein the chip chute is pressurized to between 5 to 25 psig.

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29. (New) A system as recited in claim 24 or 25, wherein the chip chute is pressurized to between 10 to 20 psig.